REVIEWS

A general kinetic theory of liquids—By M. Born and H. S Green. Macmillan & Co. Ltd., Publishers, London, 1950. Price 10s. 6d.

This little volume contains six articles reprinted from Proc. Roy. Soc. A. of 1946-47. Of these, the first, third, fourth and fifth articles are written jointly by M. Born and H. S. Green, the remaining by the junior writer alone, being communicated by Prof. Born.

In the first three papers the writers claim to have given a general kinetic theory of liquid. Here the well known problems of classical statistical mechanics are discussed by taking a law of distribution not in the usual Maxwellian form in which the potential energy is neglected but in a more general form with the potential energy $\phi(r)$. It is apparent that unless $\phi(r)$ is defined for the liquid state the theory should be applicable to any state within the limits of classical statistics. The quantum extensions of the above theory has been made in their fourth paper. In this connection it may be mentioned that Fermi statistics with magnetic potential energy has already been used by Pauli (Zeit. f. Phys. Vol. 41, p. 97, 1927) for calculating the paramagnetic susceptibility. Thus, the idea of taking potential energy in the distribution function is not new.

In the fifth paper is discussed the corresponding thermodynamics.

The sixth and the last paper is rather interesting. Here the finer variation of density has been considered using Schrödinger wave equation, the potential $\phi(r)$ being taken for liquid after Lennard-Jones and the total density is taken to be the product of the Maxwellian and Schrodinger densities (*vide* Eq. 2.51). This idea is well known in wave statistics where the total density is taken as the product of Fermic and Schrödinger densities.

Lastly, the mode of presentation appears to be as unattractive as in the well known book 'Kristalgitter' written by the senior writer of the papers.

K. C. K.

History of Physics—By Max von Laue. Pp. 150 viii. Academic Press Inc., Publishers, New York, 1950 Price $ 2.30

In writing this short history of physics, the author has covered the following topics: (1) Measurement of time, (2) Mechanics (3) Gravitation and action at a distance, (4) Optics, (5) Electricity and Magnetism, (6) The reference system of Physics, (7) The basis of the theory of heat (8) The law of conservation of energy, (9) Thermodynamics, (10) Atomistics, (11) Nuclear Physics, (12) Physics of crystals, (13) Heat radiation and (14) Quantum Physics. The most difficult task in writing such a history is to date the discoveries accurately and in several cases some confusion may

arise in finding out the actual discoverer. The author has made it clear in the introduction how he has got rid of this difficulty. According to him a discovery should be dated only from that time at which it was so clearly and definitely stated that it had a distinct effect on further progress.

The topics mentioned above are so varied that a specialist in any one of these branches of Physics would take a very long time to collect all the facts incorporated in the book from existing literature. The situation is, however, different to the distinguished author, because not only he has himself made very valuable contributions to our knowledge in many of the topics mentioned above but he has also kept in close touch with the advancement in the other topics, as can be clearly seen from the elegant manner in which he has described from historical point of view the developments in those branches of Physics

The author has dealt with only the early history in the case of most of the topics and in doing so he has started with the earliest work on the topic on record and has stopped at some stage of development which is for different topics. For instance, the chapter on Nuclear Physics starts with the discovery of radio-activity in 1896 and ends with the measurement of the wavelength of γ-rays emitted by fission fragments of plutonium in 1949, but the chapter on Optics starts with the idea of formation of images published in the thirteenth century and ends with Loretz's theory of the Zeeman effect. Of course Planck's quantum theory is responsible for recent development in Optics. These developments come under Quantum Physics, but this chapter again is not written in such detail as would allow the discovery of the Raman effect to be at least mentioned, although the Compton effect has been included.

To almost every physicist the book will be found to be useful in forming clear notion about the sequence of events in the early development in some of the topics in which he himself may not have specialised.

The book is nicely got up, but as the historical discussions are short there are no diagrams. The price seems to be moderate.

S. C. S